Abstract

In this paper, the design of a low-pass minimum phase equiripple finite impulse response (FIR) digital filter from the given low-pass linear phase equiripple. The initial linear phase transfer function is obtained by standard Parks-McClellan algorithm. The shorter group delay should be minimal for efficient performance of digital pulse shaping filter like it improves the performance parameters like increased Capacity, reduced BER, better S/N ratio, and Reduced ISI (noise). The small group delay minimum phase filter coefficients were subjected to QAM (32, 64, and 128) system. The minimum phase filter performed well in terms of bit error rate (BER) parameter.

References

- G. A. Mian and A. P. Nainer, "A fast procedure to design equiripple
Investigate the Performance of QAM Communication System by Transforming Linear Phase Filter Design using Parks-McClellan Algorithm into Minimum Phase Filter 
- A. ENIS CETIN,OMER N. GEREK,YASEMIN YARDIMCI, , "Equiripple FIR filter design by FFT algorithm," signal processing magazine 1997 IEEE. 
- A S Kang, Vishal Sharma, "Analysis of Simulation Parameters of Pulse Shaping FIR Filter for WCDMA," Vol 1, No 1 (June 2010) © IJoAT

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